

## REMARKS

No claims have been amended, cancelled or added. Accordingly, claims 1 – 75 are presently pending and favourable reconsideration thereof is respectfully requested. Claims 1, 37, 38 and 40 are independent claims.

### **35 U.S.C. § 103 – Gupta et al. in view of D'Souza et al.**

The Examiner has rejected claims 1, 37, 38 and 40 under 35 U.S.C. § 103(a) as being unpatentable over United States Patent Publication No. 2004/0022332 to Gupta et al., in view of United States Patent No. 6,704,289 to D'Souza et al.

#### Claim 1

Applicant respectfully submits that neither Gupta et al. nor D'Souza et al. taken alone or in combination disclose or suggest producing a correlation value representing a correlation of a first traffic waveform with a second traffic waveform wherein each of said waveforms represents a time distribution of data volume as recited in applicant's claim 1.

On page 3 of the Office Action, the Examiner alleges that Gupta et al. disclose that the diagram of CBDSP 130 shows a correlator which multiplies a first and second waveform to be correlated, resulting in a correlation sum. Applicant understands the Examiner to mean that the radio frequency (RF) waveform of Gupta et al. is the first waveform in applicant's claim 1 and the locally generated waveform template of Gupta et al. is the second waveform in applicant's claim 1. The purpose for the correlation appears to be to extract an RF signal from noise. There is nothing to suggest that one should consider correlating waveforms representing data volume in first and second directions, especially since Gupta et al were not concerned with bandwidth anomaly detection, but rather finding a signal in noise.

The purpose for correlation in applicant's claims is quite different from that of Gupta et al. Applicant respectfully submits that one of ordinary skill in the art would find the Gupta et al system so removed from the problem solved by the present applicant that there would be no reason to modify the Gupta system in a manner that would suggest the specific elements recited in applicants claim 1.

On page 3 of the Office Action, the Examiner alleges that D'Souza et al. disclose a method of producing a bandwidth anomaly signal when a correlation value satisfies a criterion. The Examiner alleges that it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the method as taught by D'Souza et al. in the network of Gupta.

Applicant respectfully submits that D'Souza et al. also do not disclose or suggest producing a correlation value representing a correlation of a first traffic waveform with a second traffic waveform wherein each of said waveforms represents a time distribution of data volume as recited in applicant's claim 1.

D'Souza et al. appears to disclose a method for monitoring service availability in a connectionless (IP) data network. The method appears to involve monitoring available customer bandwidth and determining when such bandwidth is below a required amount under a customer service level agreement. In the event that customer available bandwidth is under the required amount, a processor 206 signals an event correlation mechanism 212 to determine the root cause of the problem. To detect the root cause of the problem, the event correlation mechanism receives and scrutinizes network fault and performance information for network fault and performance alarms 216 [col. 4, lines 12-21, figure 3]. As best understood, the event correlation mechanism 212 comprises a rule-based system that analyses incoming data in accordance with a set of prescribed rules that dictate a certain result (i.e. a root cause). There is no suggestion that the information referred to by D'Souza et al should include waveforms representing time distributions of data volume in first and second directions and the correlation

suggested by D'Souza et al is not a correlation of waveforms, but rather a correlation of information, with rules that dictate a certain result.

The Examiner suggests that the motivation for using the method as taught by D'Souza et al in the network of Gupta et al would be that it increases system efficiency. While there is always a desire to increase system efficiency in any system, such desire does not provide any motivation or suggestion to provide the combination of specific elements recited in applicant's claim 1. Such desire may motivate experimentation, but there is nothing that would lead one of ordinary skill in the art to detect bandwidth anomalies by correlating first and second waveforms representing time distributions of data volume in first and second directions in a communication system.

Even if the teachings of Gupta et al and D'Souza et al were combined, the resulting combination would not be the combination of elements recited in applicant's claim 1 as there is nothing to suggest correlating first and second waveforms representing time distributions of data volume in first and second directions and producing a bandwidth anomaly signal when the correlation satisfies a criterion

Therefore, applicant respectfully submits that claim 1 is not obvious having regard to Gupta et al. in view of D'Souza et al., and applicant respectfully submits that the rejection of claim 1 under 35 U.S.C. 103(a) is improper.

#### Claims 37, 38, and 40

Claims 37, 38, and 40 are independent claims reciting elements similar to those recited in independent amended claim 1. Accordingly, applicant respectfully submits that for reasons similar to those above in respect of independent claim 1, claims 37, 38, and 40 are not obvious in view of the cited references. Therefore,

Applicant respectfully submits that the Examiner's rejection of claims 37, 38, and 40 under 35 U.S.C. 103(a) is improper.

**35 U.S.C. § 103 – Gupta et al. in view of D'Souza et al. and An**

The Examiner has rejected claims 2, 3, 41, 42, 44, 51, 64 – 61, 67, and 70 – 75 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al., in view of D'Souza et al., and further in view of United States Patent Publication No. 2001/0040919 to An.

An was addressed in the applicant's arguments filed 2/6/2008. The Examiner states on page 1 of the present Office Action that applicant's arguments filed 2/6/2008 with respect to the rejection(s) of claim(s) 1, 37, 38 and 40 under 103 rejections are persuasive. Applicant thanks the Examiner for the careful review of the An reference. However, as noted above, applicant respectfully submits that Gupta et al. and D'Souza et al. fail to disclose or suggest producing a correlation value representing a correlation of a first traffic waveform with a second traffic waveform wherein each of said waveforms represents a time distribution of data volume in a respective direction as recited in applicant's independent claims 1 and 40 from which the rejected claims depend. Applicant respectfully submits that An fails to disclose or suggest the same, and therefore independent claims 1 and 40 are not obvious having regard to Gupta et al., in view of D'Souza et al., and further in view of An.

Accordingly, applicant respectfully submits that claims 2 and 3 that depend directly or indirectly from independent claim 1, and claims 41, 42, 44, 51, 54 – 61, 67, and 70 – 75 that depend directly or indirectly from independent claim 40, are not obvious in view of the cited references, due to their dependencies, and due to the additional subject matter that these claims recite.

In connection with claim 61, applicant wishes to note that the Examiner alleges that paragraph 108 of Gupta et al is relevant. Applicant respectfully submits that paragraph 108 describes that portion a) of Figure 17 represents BPSK-modulated received signal, portion b) represents an in phase reference signal used for correlating, portion c) represents the output decision of an in-phase correlator, portion d) represents an anti-phase reference and portion e) represents the decisions of the anti-phase correlator. None of the waveforms represents a traffic waveform in the context of applicant's claims, in particular representing a statistical measure of a time distribution of data volume in a first or second direction in a communication system.

Therefore, Applicant respectfully submits that the Examiner's rejection of claims 2, 3, 41, 42, 44, 51, 54 – 61, 67, and 70 – 75 under 35 U.S.C. § 103(a) is improper.

**35 U.S.C. § 103 – Gupta et al. in view of D'Souza et al. and Kjeldsen et al.**

The Examiner has rejected claims 5, 6, 21, 22 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al., in view of D'Souza et al., and further in view of United States Patent No. 7,206,359 to Kjeldsen et al.

On page 10 of the Office Action, the Examiner alleges that Kjeldsen et al. teach a method of generating the first traffic waveform in response to a first set of traffic measurement values. The Examiner alleges that it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the method as taught by Kjeldsen et al. in the network of Gupta et al. and D'Souza et al. As stated above, the teachings of Gupta et al. and D'Souza do not combine to arrive at the combination of elements recited in applicant's claims. Kjeldsen et al. fail to provide any teaching that would motivate one of ordinary skill in the art to make the necessary modifications to Gupta et al and D'Souza et al to allow them to be combined and to make the modifications and additions that would be necessary

to provide the combination recited in applicant's independent claims 1 and 40, from which the rejected claims depend.

The passages of Kjeldsen et al. referred to by the Examiner describe inputting data samples into a discrete wavelet packet transform to reduce the samples into component symbol streams. The data samples appear to be obtained from a wireless receiver and the discrete wavelet packet transform is used as part of a process to determine symbols represented by the data samples. The data samples do not represent a first traffic waveform in the context of applicant's claims and do not represent a time distribution of data volume in a first or second direction and there is nothing to suggest that they should. Applicant respectfully submits that Kjeldsen et al fail to motivate one of ordinary skill in the art to modify Gupta et al and D'Souza et al to arrive at the combinations recited in applicant's independent claims.

Notwithstanding, Kjeldsen fails to provide any motivation to provide the first or second traffic waveforms recited in applicant's independent claims or to generate the first or second traffic waveforms in response to traffic measurement values or subject a set of traffic measurement values to a discrete wavelet transform as recited in applicant dependent claims.

On page 10 of the Office Action, the Examiner alleges that motivation for using the method as taught by Kjeldsen et al. in the network of Gupta et al. and D'Souza et al. is that it reduces used bandwidth. Motivation for reducing bandwidth is not motivation to provide the specific elements of applicant's claims. A desire for reducing bandwidth is not sufficient to enable one of ordinary skill in the art to be led to the specific operations or structure recited in applicant's claims, in particular, correlating first and second waveforms representing time distributions of data volume in first and second directions to determine when to produce a bandwidth anomaly signal.

Thus, applicant respectfully submits that neither Gupta et al, D'Souza et al, nor Kjeldsen et al would motivate one of ordinary skill in the art to provide the combination of elements recited in claim 5 and therefore claim 5 is not obvious.

Claims 21 and 45 are dependent claims reciting elements similar to those recited in amended claim 5. Accordingly, applicant respectfully submits that for reasons similar to those above in respect of claim 5, claims 21 and 45 are not obvious in view of the cited references.

Claims 6 and 22 that depend from claims 5 and 21 respectively are not obvious in view of the cited references, due to their dependencies, and due to the additional subject matter that these claims recite.

Accordingly, applicant respectfully submits that claims 5, 6, 21, and 22 that depend directly or indirectly from independent claim 1, and claim 45 that depends directly or indirectly from independent claim 40, are not obvious in view of the cited references, due to their dependencies, and due to the additional subject matter that these claims recite. Therefore, Applicant respectfully submits that the Examiner's rejection of claims 5, 6, 21, 22, and 45 under 35 U.S.C. § 103(a) is improper.

**35 U.S.C. § 103 – Gupta et al. in view of D'Souza, Kjeldsen et al. and Sahinoglu et al.**

The Examiner has rejected claims 7 – 12, 23 – 28, 46 – 50 and 62 – 64 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al., in view of D'Souza et al., and Kjeldsen et al., and further in view of United States Publication No. 2003/0021295 to Sahinoglu et al.

Sahinoglu et al. was addressed in the applicant's arguments filed 2/6/2008. The Examiner states on page 1 of the Office Action that applicant's arguments filed 2/6/2008 with respect to the rejection(s) of claim(s) 1, 37, 38 and 40 under 103

rejections are persuasive. Applicant thanks the Examiner for the careful attention to the Sahinoglu et al reference. However, as noted above, applicant respectfully submits that Gupta et al., D'Souza et al., and Kjeldsen et al. fail to disclose or suggest producing a correlation value representing a correlation of a first traffic waveform with a second traffic waveform wherein each of said waveforms represents a time distribution of data volume in a respective direction as recited in applicant's independent claims 1 and 40 from which the rejected claims depend. Applicant respectfully submits that Sahinoglu et al. also fail to disclose or suggest the same, and therefore independent claims 1 and 40 are also not obvious having regard to Gupta et al., in view of D'Souza et al., and Kjeldsen et al. and further in view of Sahinoglu et al.

Accordingly, applicant respectfully submits that claims 7 – 12 and 23 – 28 that depend directly or indirectly from independent claims 1, and claims 46 – 50 and 62 – 64 that depend directly or indirectly from independent claim 40, are not obvious in view of the cited references, due to their dependencies, and due to the additional subject matter that these claims recite. Therefore, Applicant respectfully submits that the Examiner's rejection of claims 7 – 12, 23 – 28, 46 – 50 and 62 – 64 under 35 U.S.C. 103(a) is improper.

**35 U.S.C. § 103 – Gupta et al. in view of D'Souza et al., Sahinoglu et al.,  
Kjeldsen et al. and Chen et al.**

The Examiner has rejected claims 13, 14, 29, 30, 68 and 69 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al. in view of D'Souza et al., Sahinoglu et al., and Kjeldsen et al., and further in view of United States Patent Publication No. 2004/0017779 to Chen et al.

Chen et al. was addressed in the applicant's arguments filed 2/6/2008. The Examiner states on page 1 of the Office Action that applicant's arguments filed 2/6/2008 with respect to the rejection(s) of claim(s) 1, 37, 38 and 40 under 103 rejections are persuasive. Applicant thanks the Examiner for the careful review



of the Chen reference. However, as noted above, applicant respectfully submits that Gupta et al., D'Souza et al., Sahinoglu et al., and Kjeldsen et al. fail to disclose or suggest producing a correlation value representing a correlation of a first traffic waveform with a second traffic waveform wherein each of said waveforms represents a time distribution of data volume in a respective direction as recited in applicant's claims 1 and 40. Applicant respectfully submits that Chen et al. also fails to disclose or suggest the same, and therefore claims 1 and 40 are also not obvious having regard to Gupta et al., in view of D'Souza et al., Sahinoglu et al. and Kjeldsen et al. and further in view of Chen et al.

Accordingly, applicant respectfully submits that claims 13, 14, 29, and 30 that depend directly or indirectly from independent claim 1, and claims 68 and 69 that depend directly or indirectly from independent claim 40, are not obvious in view of the cited references, due to their dependencies, and due to the additional subject matter that these claims recite. Therefore, Applicant respectfully submits that the Examiner's rejection of claims 13, 14, 30, 68, and 69 under 35 U.S.C. 103(a) is improper.

**35 U.S.C. § 103 – Gupta et al. in view of D'Souza et al., Sahinoglu et al.,  
Chen et al., Kjeldsen et al. and An**

The Examiner has rejected claims 15 – 20, 31 – 36, 52, 53, 65, 66 under 35 U.S.C. § 103(a) as being unpatentable over Gupta et al., in view of D'Souza et al., Sahinoglu et al., Chen et al., and Kjeldsen et al., and further in view of An.

As noted above, applicant respectfully submits that Gupta et al., D'Souza et al., Sahinoglu et al., Chen et al. and Kjeldsen et al. fail to disclose or suggest producing a correlation value representing a correlation of a first traffic waveform with a second traffic waveform wherein each of said waveforms represents a time distribution of data volume in a respective direction as recited in applicant's independent claims 1 and 40. As also noted above, applicant respectfully submits that An also fails to disclose or suggest the same, and therefore claims 1

and 40 are also not obvious having regard to Gupta et al., D'Souza et al., Sahinoglu et al., Chen et al. and Kjeldsen et al. and further in view of An.

Accordingly, applicant respectfully submits that claims 15 – 20 and 31 – 36 that depend directly or indirectly from independent claim 1, and claims 52, 53, 65 and 66 that depend directly or indirectly from independent claim 40, are not obvious in view of the cited references, due to their dependencies, and due to the additional subject matter that these claims recite. Therefore, Applicant respectfully submits that the Examiner's rejection of claims 15 – 20, 31 – 36, 52, 53, 65 and 66 under 35 U.S.C.103(a) is improper.

### **Conclusion**

Applicant has shown above that the rejections under 35 USC 103(a) are improper. Consequently, applicant respectfully requests that the cited prior art, the rejections and remarks above be carefully considered by the Examiner with a view to withdrawing the rejections and issuing a notice of allowance.

Respectfully submitted,

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and 40 are also not obvious having regard to Gupta et al., D'Souza et al., Sahinoglu et al., Chen et al. and Kjeldsen et al. and further in view of An.

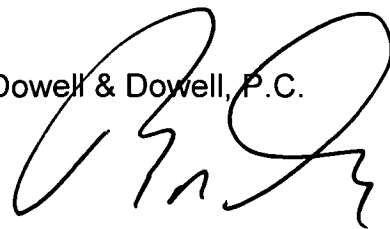
Accordingly, applicant respectfully submits that claims 15 – 20 and 31 – 36 that depend directly or indirectly from independent claim 1, and claims 52, 53, 65 and 66 that depend directly or indirectly from independent claim 40, are not obvious in view of the cited references, due to their dependencies, and due to the additional subject matter that these claims recite. Therefore, Applicant respectfully submits that the Examiner's rejection of claims 15 – 20, 31 – 36, 52, 53, 65 and 66 under 35 U.S.C.103(a) is improper.

### Conclusion

Applicant has shown above that the rejections under 35 USC 103(a) are improper. Consequently, applicant respectfully requests that the cited prior art, the rejections and remarks above be carefully considered by the Examiner with a view to withdrawing the rejections and issuing a notice of allowance.

Respectfully submitted,

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